

CLAIMS

1. A carbon fiber felt comprising a carbon fiber aggregate, and a binder resin to bond the carbon fiber
5 constituting said aggregate, wherein the felt contains a fire resistant agent.

2. A felt according to claim 1, wherein the binder resin comprises a thermosetting resin.

3. A felt according to claim 1, wherein the fire
10 resistant agent comprises at least one member selected from the group consisting of a phosphorus-containing compound, a boron-containing compound and a silicone compound.

4. A felt according to claim 1, wherein the fire
15 resistant agent comprises a silicone compound having a reactive group.

5. A felt according to claim 1, wherein the fire resistant agent comprises a silicone compound having at least two reactive functional groups.

6. A felt according to claim 5, wherein the
20 reactive functional group is at least one member selected from the group consisting of a hydrolytic condensable group, an ether group, an epoxy group, a carboxyl group, a mercapto group, an amino group, a substituted amino group, a polymerizable unsaturated group, and an isocyanate group;
25 and the silicone compound comprises at least one member selected from the group consisting of an organosiloxane and a silane.

7. A felt according to claim 5, wherein the fire resistant agent comprises a polyorganosiloxane having at least one functional group selected from the group consisting of a halogen atom, a hydroxyl group and an alkoxy group.

8. A felt according to claim 1, wherein the proportion of the fire resistant agent is 1 to 30 parts by weight relative to 100 parts by weight of the carbon fiber.

9. A felt according to claim 1, wherein the proportion of the binder resin is 1 to 50 parts by weight relative to 100 parts by weight of the carbon fiber, and the proportion of the fire resistant agent is 1 to 70 parts by weight relative to 100 parts by weight of the binder resin.

10. A felt according to claim 1, wherein the binder resin contains the fire resistant agent.

11. A felt according to claim 1, wherein the carbon fiber comprises a fine carbon fiber.

12. A felt according to claim 1, wherein the mean diameter of the carbon fiber is 0.5 to 2 μ m.

13. A felt according to claim 1, wherein the carbon fiber comprises a pitch-based carbon fiber.

14. A felt according to claim 1, wherein the carbon fiber comprises an anisotropic carbon fiber.

15. A felt according to claim 1, which comprises a web of the carbon fiber and a thermosetting resin for

bonding the carbon fiber constituting said web, wherein the carbon fiber comprises an anisotropic pitch-based carbon fiber having a mean diameter of 0.5 to 5 μ m and a mean length of 1 to 15mm; and the felt contains at least one fire resistant agent selected from the group consisting of a phosphoric ester, a boric acid and a silicone compound, in a proportion of 1.5 to 25 parts by weight relative to 100 parts by weight of the carbon fiber.

16. A felt according to claim 15, wherein the mean diameter of the carbon fiber is 0.5 to 2 μ m, the thermosetting resin comprises at least a phenol-series resin, and the fire resistant agent comprises the silicone compound having a reactive group; and the felt contains the fire resistant agent in a proportion of 2 to 20 parts by weight relative to 100 parts by weight of the carbon fiber.

17. A heat insulating material formed by the carbon fiber felt recited in claim 1.

18. A process for producing a carbon fiber felt comprising a carbon fiber aggregate and a binder resin, which comprises bonding the carbon fiber aggregate by the binder resin in the presence of a fire resistant agent.

19. A process according to claim 18, which comprises adhering a mixture containing a thermosetting resin and the fire resistant agent to the carbon fiber aggregate, and curing the thermosetting resin to obtain a carbon fiber felt having a bulk density of 1 to 30 kg/m³.